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RECENTLY PUBLISHED RESEARCH OF THE
CHEMICAL INSTITUTE OF THE BELORUSSIAN ACADEMY OF
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"Kinetics of the Thermal Decomposition of Silver Oxalate," B. V. Yerofe'yev, P. I. Bel'kevich, A. A. Volkova, Inst of Chem, Acad Sci, Belorussian SSR, Minsk

"Zhur Fiz Khim" Vol 20, 1946, pp 1103-12

The progress of the reaction $\text{Ag}_2(\text{OOC})_2 \rightarrow \text{CO}_2$ in darkness was followed by gas-pressure measurements. The rate v of the reaction was smaller the older the specimen. In a given experiment, v increased to a maximum within 20 minutes at 125° , and 110 minutes at 110° and then decreased to zero within 2 or more hours. If the heating was interrupted for 30-60 min, a second heating resulted in v values as if no interruption had occurred; thus, the decomposition of $\text{Ag}_2(\text{OOC})_2$ is not a chain process. The gradual acceleration of the decomposition must be due to the catalytic effect of Ag. This explanation agrees with the observation that for the first 30-50% of the decomposition the fraction decomposed, α , is given by the equation $\log(1 - \alpha) = -kt^n$, t being time and k and n constants. n is 4 to 5. The number of cations in the original nucleus of Ag crystals is one. From the increase of k at higher temperature an energy of activation of 133,000 calories is calculated.

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